

5     WHAT IS CLAIMED IS:

1.   A method comprising:

             providing an integrated circuit (IC) die in a package, the IC die having a metal layer on a back surface of the IC die; and  
             applying a bias signal to the IC die via the metal layer.

10    2. The method of claim 1, wherein:

             the package includes a heat spreader electrically coupled to the back surface of the IC die; and  
             the bias signal is applied via the heat spreader.

3.   The method of claim 1, wherein:

15       the providing the IC die includes thinning the IC die before applying the metal layer to the back surface of the IC die.

4.   The method of claim 1, wherein:

             the providing the IC die includes mounting the IC die on the substrate in flip-chip fashion.

20    5. An apparatus comprising:

             an integrated circuit (IC) die;  
             a metal layer on a back surface of the IC die;  
             a heat spreader conductively coupled to the metal layer; and

5           a bias signal source coupled to the heat spreader to supply a bias signal to the IC die via the metal layer.

6. The apparatus of claim 5, further comprising:

    a wire coupled to the heat spreader to provide the bias signal from the signal source.

10     7. The apparatus of claim 5, further comprising:

    a package substrate on which the IC die is mounted, the package substrate including a conductive path to provide the bias signal to the heat spreader.

8. The apparatus of claim 5, wherein the IC die includes a microprocessor.

9. An article of manufacture, comprising:

15     a substrate;

    an integrated circuit (IC) die mounted on the substrate;

    a metal layer on a back surface of the IC die;

    a heat spreader electrically coupled to the metal layer; and

20     an electrically conductive connection to couple the heat spreader to a device external to the IC die.

10. The article of manufacture of claim 9, wherein the electrically conductive connection passes through the substrate.

- 5      11. The article of manufacture of claim 9, wherein the electrically conductive connection includes a wire that is not part of the substrate.
  12. The article of manufacture of claim 9, wherein the IC die includes a microprocessor.
  13. The article of manufacture of claim 9, wherein the IC die is mounted in flip-chip fashion on the substrate.
- 10     14. The article of manufacture of claim 9, further comprising:  
          a layer of solder between the metal layer and the heat spreader.
15. An article of manufacture, comprising:  
          a substrate;  
          an integrated circuit (IC) die mounted on the substrate;  
15        a metal layer on a back surface of the IC die;  
          a heat spreader electrically coupled to the metal layer; and  
          means for providing a signal path between the heat spreader and a device external to the IC die.
16. The article of manufacture of claim 15, wherein the means for providing a signal path includes a wire coupled to the heat spreader.
- 20     17. The article of manufacture of claim 15, wherein the means for providing a signal path includes a conductive path that passes through the substrate.

- 5        18. The article of manufacture of claim 15, wherein the IC die includes a microprocessor.
19. The article of manufacture of claim 15, wherein the IC die is mounted in flip-chip fashion on the substrate.
20. The article of manufacture of claim 15, further comprising:
- 10              a layer of solder between the metal layer and the heat spreader.
21. A system comprising:
- a die comprising a microprocessor; and
- a chipset in communication with the microprocessor;
- wherein:
- 15              the die has a metal layer on a back surface of the die; and
- the die is mounted in a package that includes:
- a substrate on which the die is mounted;
- a heat spreader electrically coupled to the metal layer; and
- an electrically conductive connection to couple the heat spreader to
- 20              a device external to the die.
22. The system of claim 21, wherein the electrically conductive connection passes through the substrate.

- 5     23. The system of claim 21, wherein the electrically conductive connection includes a wire that is not part of the substrate.
24. The system of claim 21, wherein the die is mounted in flip-chip fashion on the substrate.
25. The system of claim 21, wherein the package also includes:
- 10                   a layer of solder between the metal layer and the heat spreader.